

BEFORE THE  
POSTAL REGULATORY COMMISSION  
WASHINGTON, D.C. 20268-0001

PERIODIC REPORTING  
(PROPOSAL SIX)

Docket No. RM2017-10

**RESPONSES OF THE UNITED STATES POSTAL SERVICE  
TO QUESTIONS 1-4 OF CHAIRMAN'S INFORMATION REQUEST NO. 3**  
(October 2, 2017)

The United States Postal Service hereby provides its response to Questions 1-4 of Chairman's Information Request No. 3, issued September 25, 2017. The questions are stated verbatim and followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorney:

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1. [Please refer to Library Reference USPS-RM2017-10/NP3, Excel file "Prop.6.ChIR.2.NP15.xlsx."] Please refer to the worksheet "Summary." Please identify and discuss the factors the Postal Service believes are responsible for the difference between cell C5 and cell C6.

**RESPONSE:**

The issue that is addressed in this question is not unique to the Parcel Select / Parcel Return Service (PRS) mail processing cost model, nor is it unique to the other parcel mail processing cost models. This issue affects all the letters, flats, and parcels mail processing cost models, with the exception of Bound Printed Matter.

In Docket No. MC95-1, the Commission discussed a "clearly capturable" cost avoidance methodology in which engineering cost models are used to estimate worksharing cost differences.<sup>1</sup> The Commission contrasted this methodology with a full cost difference methodology that relied on CRA-derived cost data to estimate worksharing cost differences.<sup>2</sup> As the Commission stated:

If costs avoided by a worksharing operation are difficult to isolate, they tend to be omitted by engineering models. Therefore, cost differentials based on engineering models tend to be underinclusive. CRA-based estimates generally include costs whether or not they are avoided by a worksharing operation. Therefore, cost differentials based on CRA estimates tend to be overinclusive.

PRC Op. MC95-1 at [4220].

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<sup>1</sup> PRC Op. MC95-1 (January 26, 1996) at [4214].

<sup>2</sup> PRC Op. MC95-1 (January 26, 1996) at [4218].

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A "hybrid" approach is the solution to this problem because it relies on both engineering cost models and CRA-derived data.<sup>3</sup> Most of the mail processing cost models currently presented in the Annual Compliance Report (ACR), including the Parcel Select / PRS mail processing cost model, rely on a hybrid cost methodology.

The value in cell C5 in the 'Summary' worksheet in the mail processing cost model is a weighted average of the mail flow cost estimates in each engineering cost model within the workbook. These mail flows are simplified representations of reality; they do not represent an exhaustive list of operations through which each mail type is processed. For example, there are no steps within any of the mail flows related to mail piece address and barcode errors, nor are there any costs related to returned and forwarded mail. In Docket No. MC95-1, the Commission described these mail flows as "best case scenarios."<sup>4</sup> These cost estimates, to use the Commission's terminology, therefore tend to be "underinclusive."

Another issue that may lead to differences between the model costs and the CRA-derived costs concerns the inputs that are used in the engineering cost models. The productivity values serve as an example. These productivity values represent average figures for all products that are processed through a given operation. It is possible that the costs would differ if productivity values specific to Parcel Select were available. Given that Parcel Select productivity values are not available, the average

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<sup>3</sup> PRC Op. MC95-1 (January 26, 1996) at [4226].

<sup>4</sup> PRC Op. MC95-1 (January 26, 1996) at [4228].

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productivity values are used. The model costs therefore might change to a degree were more detailed cost input data available.

Finally, the value in cell C6 in the 'Summary' worksheet in the mail processing cost model is the "proportional" portion of the Parcel Select mail processing cost by shape estimate contained in column E of the 'Cost Pool Data' worksheet. The proportional amount of mail processing costs has increased somewhat over time as the Commission has applied its cost pool classification methodology to the various mail processing cost models. In the case of Parcel Select and PRS, the Commission's cost pool classification methodology was implemented in Order No. 719 (April 28, 2011). Prior to that time, the Postal Service only classified cost pools as being proportional if they contained costs that were actually estimated in the engineering cost models. Consequently, the difference between the model costs and the CRA-derived costs has increased somewhat over time. For example, if the Postal Service's Docket No. ACR2009 cost pool classification methodology were applied to the Parcel Select portion of the mail processing cost model in the instant proceeding, the CRA proportional costs in cell C6 would decrease by approximately 12 percent. In addition, the CRA proportional adjustment factor, which is equal to the value in cell C6 divided by the value in cell C5, would decrease from 1.917 to 1.683.

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2. [Please refer to Library Reference USPS-RM2017-10/NP3, Excel file "Prop.6.CHIR.2.NP15.xlsx."] Please refer to the Postal Service's responses to Chairman's Information Request No. 2, question 6, and worksheets "M-DNDC-5D" and "IO-DNDC-5D."<sup>5</sup> The Postal Service states that, after making the revisions discussed in the Responses to CHIR No. 2, "the apparent anomaly cited in the question no longer exists." Responses to CHIR No. 2, question 6. Given these revisions, please confirm that the difference between cell J33 of worksheet "M-DNDC-5D" and cell J33 of worksheet "IO-DNDC-5D" accurately reflects the cost of processing parcels in these categories. If not confirmed, please explain.

**RESPONSE:**

Confirmed. It should be noted, however, that there are no longer any distinct Parcel Select Lightweight (PSLW) machinable and irregular parcel price categories. Consequently, the machinable and irregular cost results are aggregated into one set of PSLW mail processing unit cost estimates.

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<sup>5</sup> Responses of the United States Postal Service to Questions 1-12 of Chairman's Information Request No. 2, September 13, 2017 (Responses to CHIR No. 2).

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3. [Please refer to Library Reference USPS-RM2017-10/NP3, Excel file "Prop.6.CHIR.2.NP15.xlsx."] Please refer to the Postal Service's Responses to CHIR No. 2, question 4 and Library Reference USPS-RM2017-10/NP1, Excel file "PROP.SIX.DATA.xlsx," worksheets "Calculation of PS Percentage" and "Calculation of PRS Percentage." The Postal Service states that "due to small sample sizes, rate categories with low volumes and low usage of contract types would have unstable cost estimates." Response to CHIR No. 2, question 4 (footnote omitted).
- a. Please discuss the feasibility of drawing a larger sample to estimate the proportional volumes of rate categories within each contract type.
  - b. Please provide the percentage of sampled Parcel Select and Parcel Return Service parcels for which destination rate codes were not found, and please discuss the reason(s) why destination rate codes were not found for these sampled pieces.
  - c. Please discuss how often the Postal Service plans to update these estimates.

**RESPONSE:**

- a. The necessary sample size  $n$  to estimate an expected population proportion  $\hat{p}$  with a given confidence level  $\alpha$ , with a certain margin of error  $ME$ , satisfies the following equation:

$$ME = Z_{\alpha} \sqrt{\frac{\hat{p}(1 - \hat{p})}{n}}$$

where  $Z_{\alpha}$  is the z-score from the standard normal distribution required for the desired confidence interval. All other values being equal, the required sample size will be greatest for values of  $\hat{p}$  closest to 50 percent. In order to estimate an expected proportion of 50 percent, with a 95 percent confidence level, with a precision of +/- 2.5 percent, the necessary sample size is calculated from the equation below:

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$$.025 = 1.96 \sqrt{\frac{0.5(1 - 0.5)}{n}}$$

When solving for  $n$ , this gives a required sample size of approximately  $n = 1530$ . To estimate a small proportion, say an expected proportion of 2 percent with precision  $\pm 1$  percent with 95 percent confidence, the required sample size is approximately  $n = 750$ . Note that this is equivalent to a Coefficient of Variation (CV) of about 25 percent, which would be unacceptably high.<sup>6</sup> Nevertheless, for Parcel Return service rate categories, it would require an increase in TRACS surface tests by a factor of more than five for every contract type. Due to resource constraints, such a drastic increase in the number of TRACS tests conducted would not be feasible for the Postal Service. Instead, by combining the different contract types and the different rate categories, and by using a hybrid model that makes reasonable assumptions, the Postal Service can achieve stable estimates in a cost effective manner.

Furthermore, as discussed in the response to ChIR No. 2, Question 4, even if estimates for each rate category on each contract type were estimated separately, this would by itself not be sufficient to estimate costs, because these would not account for the different cube by rate category.

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<sup>6</sup> For estimates of small proportions from small sample sizes, adjustments to the normal approximation to the estimate of the standard error  $\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$  are recommended, which would further increase the CV.

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b. The destination rate code was not found for 13.3 percent of the Parcel Select mail pieces identified on TRACS tests and for 16.3 percent of the Parcel Return Service mail pieces identified on TRACS tests. There are three scenarios in which the destination rate code would not be identified for a mail piece:

1. *The data collector did not scan the barcode during the TRACS test.*

The TRACS data collector did not scan the barcode on 7.4 percent of the Parcel Select mail pieces and 8.1 percent of the Parcel Return Service mail pieces identified on TRACS tests. This may have happened for several reasons, including the barcode being damaged or obscured and not readable by the scanner, the scanner malfunctioning, or the data collector working under tight time constraints and being unable to scan every mail piece.

2. *The data collector scanned the barcode during the TRACS test, but the barcode was not found in the PTR database.*

The barcode was not found in PTR for 1.9 percent of the Parcel Select mail pieces and 1.4 percent of the Parcel Return Service mail pieces identified on TRACS tests. This may have happened for similar reasons as above, if operations personnel failed to scan the mail piece.

3. *The data collector scanned the barcode during the TRACS test, and it was found in the PTR database, but the destination rate code field was blank.*

The destination rate code was blank for 3.9 percent of the Parcel Select mail pieces and 6.8 percent of the Parcel Return Service mail pieces identified on



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TRACS tests. This may have happened if the mailer did not provide the destination entry information on the manifest.

- c. The Postal Service plans to update these estimates annually.

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4. Please refer to the Petition and the highlighted sheets in Excel file "Prop.6.ChIR.3.NP16\_PRC.xlsx" filed under seal as a nonpublic attachment to this information request. The Postal Service states that the unexpected transportation leg methodology was developed because "[e]mpirical data suggests that each of the destination-entered price categories (DNDC, DSCF, and DDU) all incur costs for modes of transportation in which one might not expect to find any costs." Petition at 7. The methodology implemented by the Postal Service uses an assumption Unexpected Transportation Legs are equal across relevant rate categories within each transportation mode. For example, the estimate of long distance legs used by the Postal Service is the same for DDU, DSCF, and DNDC parcels. The attached Excel file "Prop.6.ChIR.3.NP16\_PRC.xlsx" uses rate category data to calculate Unexpected Transportation Legs specific to relevant rate categories within each transportation mode.
- a. Please confirm that the breakdown of Unexpected Transportation Legs into rate category-specific values in Excel file "Prop.6.ChIR.3.NP16\_PRC.xlsx" worksheet "Other Inputs" cells B37:D47 and B58:D65 is an accurate disaggregation. If not confirmed, please explain.
  - b. Please discuss whether calculating Unexpected Transportation Legs specific to rate categories would be expected to improve the accuracy of unit transportation costs by rate category.

**RESPONSE:**

- a. Confirmed.
- b. In theory, calculating the Unexpected Transportation Legs specific to each rate category would be preferable. The Postal Service considered this approach when developing the proposed changes, but ultimately decided to use the percentages in aggregate due to the small sample sizes for each category individually. For reasons stated in the response to Question 3 of this Information Request, it is not feasible for the Postal Service to increase the sample size enough to use each rate category

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individually. The method proposed by the Postal Service in Proposal Six is less likely to result in unstable cost estimates.